

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claims 1-3 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashimizu (US Patent 6,040,923), in view of Iizuka (US Patent 6,721,009) further in view of Sakakibara et al. (United States Patent Publication 2003/0053157) hereinafter referenced as Sakakibara further in view of Furuoya (United States Patent 5,805,294) further in view of Ogata (United States Patent 6,639,695).

17. **Regarding claim 1**, Takashimizu discloses a method, using an optical image reading apparatus, with an optical sensing device (40-1) used to scan an image line by line, and exhibited in figure 2, comprising: setting CCD reading width using, “a size sensor 44, which detects a paper size such as B5, A4, B4, and A3 from the width of the paper fed into the paper transfer path 20. Reading widths of the line CCDs 40-1 and 40-2 of the face reading unit 38-1 and back side reading unit 38-2 are set by this size detection using the paper width.”

18. In addition Takashimizu discloses charge processing where, “The face reading unit 38-1 incorporates a line CCD 40-1, optically reads an image on the surface of the

paper 18 passing a reading point 62 on the paper transfer path 20, converts the image into an electric signal, and finally generates image data based on the various image portions scanned," and reads on claimed step of, "*processing the induced charges corresponding to the effective region to form at least a piece of an image associated with the document,*" as disclosed in column 8, lines 48-53.

19. Takashimizu discloses the image scanning method in columns 3-6 and the device is exhibited in figure 2. However Takashimizu fails to disclose the steps of, "*fetching out the induced charges corresponding to the front region and the effective region, and transferring the induced charges corresponding to the post region produced when scanning the first portion to the front pixel region.*"

20. However the examiner maintains that it was well known in the art for the optical reading method disclosed in Takashimizu to, "*fetch out the induced charges corresponding to the front region and the effective region for the first portion, and transferring the induced charges corresponding to the post region produced when scanning the first portion to the front pixel region,*" as taught by Iizuka.

21. In a similar field of endeavor, Iizuka discloses a method of driving a solid state imaging device. In addition Iizuka discloses "*fetch out the induced charges corresponding to the front region and the effective region for the first portion, and transferring the induced charges corresponding to the post region produced when scanning the first portion to the front pixel region,*" as disclosed in column 13, lines 60-67 and column 14, lines 10-16.

22. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu to include "*fetching out the induced charges corresponding to the front region and the effective region for the first portion, and transferring the induced charges corresponding to the post region produced when scanning the first portion to the front pixel region,*" for the purpose of decreasing the effects of radiation on the solid state imaging device, as disclosed in Iizuka, column 3, lines 32-49.

22. Takashimizu discloses the image scanning method in columns 3-6 and the device is exhibited in figure 2. However Takashimizu fails to disclose the steps of, "*shielding at least one of the front region or the post region of the optical sensing device from light when scanning the document and in the transfer step wherein the shielding inhibits an overflow of induced charges in the front region when scanning the second portion of the document.*"

23. However the examiner maintains that it was well known in the art for the optical reading method disclosed in Takashimizu to, "*shielding at least one of the front region or the post region of the optical sensing device from light when scanning the document and in the transfer step wherein the shielding inhibits an overflow of induced charges in the front region when scanning the second portion of the document.,*" as taught by Sakakibara.

24. In a similar field of endeavor, Sakakibara discloses an image inputting apparatus, and image forming apparatus using a four line CCD sensor. In addition Sakakibara discloses "*shielding at least one of the front region or the post region of the optical*

sensing device from light when scanning the document and in the transfer step wherein the shielding inhibits an overflow of induced charges in the front region when scanning the second portion of the document, as disclosed in [0060], [0092]-[0093] and [0112].

25. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu to include “*shielding at least one of the front region or the post region of the optical sensing device from light when scanning the document and in the transfer step wherein the shielding inhibits an overflow of induced charges in the front region when scanning the second portion of the document* for the purpose of reading a certain size of paper with minimal defects, as disclosed in Sakakibara, [0060].

26. However Takashimizu and Sakakibara do not disclose pre scanning one or more portions of a document with an optical sensing device to determine an effective region of the optical sensing device that corresponds to the scanned document. However it would have been obvious to one of ordinary skill in the art at the time of the invention to include such a modification as taught by Furuoya. In a similar field of endeavor, Furuoya discloses a document size detection by a prescan having an acceleration region. In addition Furuoya discloses pre scanning one or more portions of a document with an optical sensing device to determine an effective region of the optical sensing device that corresponds to the scanned document, and scanning at least a first portion of the document to produce induced charges in the optical sensing device as disclosed in column 8, lines 40-52. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu to include the

modification of Furuoya for the purpose of reading a certain size of paper with minimal defects, as disclosed in Furuoya column 2, lines 1-10. However Takashimizu, Sakakibara and Furuoya fail to explicitly disclose wherein the effective region is a portion of the optical sensing device. However it would have been obvious to one of ordinary skill in the art at the time of the invention to include such a modification to the invention as taught by, Ogata. In a similar field of endeavor Ogata discloses wherein the effective region is a portion of the optical sensing device and also that the charges are read out from the device, as disclosed in column 5, lines 60-67 and column 6, lines 1-25. Therefore it would have been obvious to include that the actual sensing device keeps track of the effective region for the purpose of speeding up the scanning process, as disclosed in Ogata column 1, lines 45-60.

23. **Regarding claim 2**, Takashimizu, Ogata, Furuyuo, Sakakibara and Iizuka disclose everything claimed as applied above (see claim 1). In addition Iizuka discloses a method wherein the front pixel region and the post pixel region are located at the two sides of the effective region, as disclosed in column 11, lines 34-45 and exhibited in figure 3B.

24. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu wherein the front pixel region and the post pixel region are located at the two sides of the effective region, for the purpose of decreasing the effects of radiation on the solid state imaging device, as disclosed in Iizuka, column 3, lines 32-49.

25. **Regarding claim 3**, Takashimizu, Ogata, Furuyuo, Sakakibara and Iizuka disclose everything as applied above (see claim 1) in addition Takashimizu discloses in column 8, lines 49-50, that “the face reading unit incorporates 38-1 a line CCD 40-1” which reads on the “*optical sensing device comprising an optical charge coupled device (CCD).*”

26. **Regarding claim 12**, Takashimizu, Ogata, Furuyuo, Sakakibara and Iizuka disclose everything claimed as applied above (see claim 1). In addition Iizuka discloses the method which further comprises adding the data contained in the induced charges transferred from the post region to data read in the induced charges generated by the front region in the scan of the second (or next) portion, as disclosed in column 13, lines 60-67 and column 14, lines 10-16.

27. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu to include adding the data transferred from the post region to data generated by the front region in the scan of the second (or next) portion, for the purpose of decreasing the effects of radiation on the solid state imaging device, as disclosed in Iizuka, column 3, lines 32-49.

28. **Claims 10-11, and 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashimizu (US Patent 6,040,923), in view of Iizuka (US Patent 6,721,009) further in view of Watanabe (United States Patent 7,034,969).

29. **Regarding claim 10**, Takashimizu and Iizuka disclose everything claimed as applied above (see claim 1). However Takashimizu and Iizuka fail to explicitly disclose a method further comprising sequentially reading the induced charges corresponding to

the front region and the effective region without reading the induced charges corresponding to the post region.

30. However it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the method of Takashimizu and Iizuka, to include the step of sequentially reading the induced charges corresponding to the front region and the effective region without reading the induced charges corresponding to the post region as taught by Watanabe.

31. In a similar field of endeavor Watanabe discloses a divided one-dimensional solid-state imaging device, method of controlling one-dimensional solid-state imaging device, and image reading apparatus and method using the same. In addition Watanabe discloses a method which includes the step of sequentially reading the induced charges corresponding to the front region and the effective region without reading the induced charges corresponding to the post region, as disclosed in column 11, lines 63-67, and column 12 lines 1-15.

32. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu and Iizuka to further comprise sequentially reading the induced charges corresponding to the front region and the effective region without reading the induced charges corresponding to the post region, for the purpose of reducing the time required to scan a photographic image, as disclosed in Watanabe, column 3, lines 30-38.

33. **Regarding claim 11**, Takashimizu, Iizuka and Watanabe disclose everything claimed as applied above (see claim 1). In addition Watanabe discloses a method

where the induce charges corresponding to the effective region (region M) are processed to form at least the piece of the image associated with the document, further comprising discarding (and not using to create the image) the induced charges associated with the front region of the optical sensing device, as disclosed in column 11, lines 57-62 and column 12, lines 24-27.

34. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu and Iizuka to further comprise where the induce charges corresponding to the effective region (region M) are processed to form at least the piece of the image associated with the document, further comprising discarding (and not using to create the image) the induced charges associated with the front region of the optical sensing device, for the purpose of reducing the time required to scan a photographic image, as disclosed in Watanabe, column 3, lines 30-38.

35. **Regarding claim 13,** Takashimizu, Iizuka and Watanabe disclose everything claimed as applied above (see claim 1). In addition Watanabe discloses the method further comprising: determining at least another portion (a different frame) of the document (film strip) to be scanned; and scanning another portion of the document to determine at least another piece of the image associated with the document (film strip in this case), as disclosed in column 8, lines 8-21.

36. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu and Iizuka to further comprise determining at least another portion (a different frame) of the document (F) to be

scanned; and scanning another portion of the document to determine at least another piece of the image associated with the document (F), for the purpose of reducing the time required to scan a photographic image, as disclosed in Watanabe, column 3, lines 30-38 and exhibited in figure 1.

37. **Regarding claim 14**, Takashimizu, Iizuka and Watanabe disclose everything claimed as applied above (see claim 13). In addition Watanabe discloses a second fine scanning step, further comprising generating the image associated with the document (film strip in this case) from pieces of the image formed from processing of the induce charges, as disclosed in column 8, lines 16-21.

39. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Takashimizu and Iizuka to further comprise a second fine scanning step, further comprising generating the image associated with the document (film strip in this case) from pieces of the image formed from processing of the induce charges, for the purpose of reducing the time required to scan a photographic image, as disclosed in Watanabe, column 3, lines 30-38 and exhibited in figure 1.

1. **Claim 15, 16-19 and 22-24** is rejected under 35 U.S.C. 103(e) as being anticipated by Watanabe (U.S. Patent Publication 7,034,969) further in view of Sakakibara et al. (United States Patent Publication 2003/0053157) hereinafter referenced as Sakakibara, further in view of Furuoya (United States Patent 5,805,294), further in view of Ogata (United States Patent 6,639,695).

2. **Regarding claim 15**, Watanabe discloses a divided one-dimensional solid-state imaging device, method of controlling one-dimensional solid-state imaging device, and image reading apparatus and method using the same. In addition Watanabe discloses a method comprising: detecting light with the sensing device when scanning at least a first portion of a document (in this case film strip, but it can be a document), the sensing device having an effective region that corresponds to at least a portion of the scanned document, and one or more non-document regions, as disclosed in column 3, lines 18-30 and column 11, lines 49-62; reading data corresponding to the light detected in the effective region of the sensing device without reading at least some data corresponding to light detected in at least one non-document region (section K) of the sensing device, as disclosed in column 12, lines 10-13; and generating a scanned image associated with the document, at least in part, from the data corresponding to the effective region of the sensing device, as disclosed in column 11, lines 58-62. However Watanabe fails to explicitly disclose the step of shielding at least one of the non-document regions of the sensing device from light when scanning the document, wherein the shielding inhibits overflow of induced charges in at least one of the non-document regions when scanning a second portion of the document.

3. However the examiner maintains that it was well known in the art for the optical reading method disclosed in Watanabe to, “shield at least one of the non-document regions of the sensing device from light when scanning the document, wherein the shielding inhibits overflow of induced charges in at least one of the non-document regions when scanning a second portion of the document.as taught by Sakakibara.

4. In a similar field of endeavor, Sakakibara discloses an image inputting apparatus, and image forming apparatus using a four line CCD sensor. In addition Sakakibara discloses "shielding at least one of the non-document regions of the sensing device from light when scanning the document, wherein the shielding inhibits overflow of induced charges in at least one of the non-document regions when scanning a second portion of the document", as disclosed in [0060], [0092]-[0093] and [0112].

5. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Watanabe to include "shielding at least one of the non-document regions of the sensing device from light when scanning the document, wherein the shielding inhibits overflow of induced charges in at least one of the non-document regions when scanning a second portion of the document.for the purpose of reading a certain size of paper with minimal defects, as disclosed in Sakakibara, [0060].

6. However Watanabe and Sakakibara do not disclose pre scanning one or more portions of a document with an optical sensing device to determine an effective region of the optical sensing device that corresponds to the scanned document. However it would have been obvious to one of ordinary skill in the art at the time of the invention to include such a modification as taught by Furuoya. In a similar field of endeavor, Furuoya discloses a document size detection by a prescan having an acceleration region. In addition Furuoya discloses pre scanning one or more portions of a document with an optical sensing device to determine an effective region of the optical sensing device that corresponds to the scanned document, and scanning at least a first portion of the

document t to produce induced charges in the optical sensing device as disclosed in column 8, lines 40-52. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Watanabe and Sakakibara to include the modification of Furuoya for the purpose of reading a certain size of paper with minimal defects, as disclosed in Furuoya column 2, lines 1-10. However Takashimizu, Sakakibara and Furuoya fail to explicitly disclose wherein the effective region is a portion of the optical sensing device and reading another portion of the document that is not the document region. However it would have been obvious to one of ordinary skill in the art at the time of the invention to include such a modification to the invention as taught by, Ogata. In a similar field of endeavor Ogata discloses wherein the effective region is a portion of the optical sensing device, that another portion which is not the document has light read from it and also that the charges are read out from the device, as disclosed in column 5, lines 60-67 and column 6, lines 1-25. Therefore it would have been obvious to include that the actual sensing device keeps track of the effective region for the purpose of speeding up the scanning process, as disclosed in Ogata column 1, lines 45-60.

9. **Regarding claim 16,** Watanabe, Sakakibara, Ogata and Furuoya disclose everything claimed as applied above (see claim 15). In addition Watanabe discloses a method wherein defining one or more non-document regions in the sensing device, further comprises: defining a front region (J) in the sensing device according to a width of the document to be scanned, as disclosed in column 11, lines 63-66; and defining a post region in the sensing device according to the width of the document to be scanned,

where the front region and the post region are adjacent to the effective region as disclosed in column 12, lines 9-15 and exhibited in figures 6A-B and figure 7.

10. **Regarding claim 17**, Watanabe, Sakakibara, Ogata and Furuoya disclose discloses everything claimed as applied above (see claim 16). In addition Watanabe discloses a method further comprising sequentially reading data corresponding to the light detected in the front region and the effective region without reading data corresponding to the light detected post region, as disclosed in column 11, lines 63-67, and column 12 lines 1-20.

11. **Regarding claim 18**, Watanabe, Sakakibara, Ogata and Furuoya disclose discloses everything claimed as applied above (see claim 16). In addition Watanabe discloses a method wherein generating a scanned image associated with the document (in this case film strip) further comprises discarding the data associated with the front region of the sensing device and not using it for imaging, as disclosed in column 11, lines 60-62; and processing data associated with the effective region of the sensing device to generate the scanned image, as disclosed in column 11, lines 63-64.

12. **Regarding claim 19**, Watanabe, Sakakibara, Ogata and Furuoya disclose discloses everything claimed as applied above (see claim 16). In addition Watanabe discloses a method further comprising associating at least some data from a scan of the first portion (in this case a frame) of the document to data from a scan of a second portion (in this case another frame), of the document as disclosed in column 8, lines 16-21.

13. **Regarding claim 22**, Watanabe, Sakakibara, Ogata and Furuoya disclose discloses everything claimed as applied above (see claim 15). In addition claim 22 is rejected for similar reasons as claim 15. Claim 22 describes an apparatus and claim 15 describes the exact method implemented by the apparatus. Thus claim 22 is rejected.

14. **Regarding claim 23**, Watanabe, Sakakibara, Ogata and Furuoya disclose discloses everything claimed as applied above (see claim 22). In addition claim 23 is rejected for similar reasons as claim 16. Claim 22 describes an apparatus and claim 16 describes the exact method implemented by the apparatus. Thus claim 23 is rejected.

15. **Regarding claim 24**, Watanabe, Sakakibara, Ogata and Furuoya disclose discloses everything claimed as applied above (see claim 23). In addition claim 24 is rejected for similar reasons as claim 18. Claim 24 describes an apparatus and claim 18 describes the exact method implemented by the apparatus. Thus claim 24 is rejected.

40. **Claims 20-21 and 25-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (United States Patent 7,034,969) in view of Iizuka (United States Patent 6,721,009).

41. **Regarding claim 20**, Watanabe discloses everything claimed as applied above (see claim 19). However Watanabe fails to explicitly disclose the method wherein associating at least some data from the scan of the first portion of the document to data from the scan of the second portion of the document further comprises transferring the data from the scan of the first portion of the document corresponding to the post region of the front region of the sensing device for use during the scan of the second portion of the document.

42. However it would have been obvious to one of ordinary skill in the art at the time of the invention to include such a modification to the invention of Watanabe, as taught by Iizuka.

43. In a similar field of endeavor, Iizuka discloses a method of driving a solid state imaging device. In addition Iizuka discloses the method wherein associating at least some data from the scan of the first portion of the document to data from the scan of the second portion of the document further comprises transferring the data from the scan of the first portion of the document corresponding to the post region of the front region of the sensing device for use during the scan of the second portion of the document (in this case, the following scan line), as disclosed in column 13, lines 60-67 and column 14, lines 10-16.

44. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Iizuka to include associating at least some data from the scan of the first portion of the document to data from the scan of the second portion of the document further comprises transferring the data from the scan of the first portion of the document corresponding to the post region of the front region of the sensing device for use during the scan of the second portion of the document (in this case, the following scan line), for the purpose of decreasing the effects of radiation on the solid state imaging device, as disclosed in Iizuka, column 3, lines 32-49.

45. **Regarding claim 21**, Watanabe and Iizuka disclose everything claimed as applied above (see claim 20). In addition Iizuka discloses the method further comprising adding the data transferred from the post region to data generated by the

front region in the scan of the second portion of the document (in this case the following scan line), as disclosed in column 13, lines 60-67 and column 14, lines 10-16.

46. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Iizuka to include adding the data transferred from the post region to data generated by the front region in the scan of the second portion of the document for the purpose of decreasing the effects of radiation on the solid state imaging device, as disclosed in Iizuka, column 3, lines 32-49.

47. **Regarding claim 25**, Watanabe and Iizuka disclose everything claimed as applied above (see claim 23). In addition claim 25 is rejected for similar reasons as claim 20. Claim 25 describes an apparatus and claim 20 describes the exact method implemented by the apparatus. Thus claim 25 is rejected.

48. **Regarding claim 26**, Watanabe and Iizuka disclose everything claimed as applied above (see claim 25). In addition claim 26 is rejected for similar reasons as claim 21. Claim 26 describes an apparatus and claim 21 describes the exact method implemented by the apparatus. Thus claim 26 is rejected.

Response to Arguments

49. Applicant's arguments filed 01/11/2010 have been fully considered but they are respectfully considered moot on the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENDAN MCCOMMAS whose telephone number is (571)270-3575. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Haskins can be reached on (571)272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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